

## AIRWAY OBSTRUCTION INJURY

Airway obstruction injury is the leading cause of unintentional injury-related death among infants under age 1. These injuries occur when children are unable to breathe normally because food or objects block their internal airways (choking), materials block or cover their external airways (suffocation) or items become wrapped around their necks and interfere with breathing (strangulation). Children, especially those under age 3, are particularly vulnerable to airway obstruction death and injury due to their small upper airways, their relative inexperience with chewing and their natural tendency to put objects in their mouths. Additionally, infants' inability to lift their heads or extricate themselves from tight places puts them at greater risk.

### **AIRWAY OBSTRUCTION DEATHS AND INJURIES**

- In 2001, 864 children ages 14 and under died from unintentional airway obstruction injuries. Of these children, 87 percent were ages 4 and under.
- In 2001, 695 children ages 14 and under died from unintentional suffocation, strangulation and entrapment.
- In 2001, 169 children ages 14 and under died from choking (30 percent food and 70 percent nonfood) and more than 17,500 children were treated in hospital emergency departments for choking-related episodes.
- In 2002, eight children ages 2 to 11 died from choking on or aspiration of a toy; three of these deaths involved balloons. Choking and suffocation/asphyxia deaths account for 62 percent of all toy-related fatalities.
- In 2002, more than 80 percent of children treated in hospital emergency rooms for airway obstruction injuries were ages 4 and under.

### **WHEN AND WHERE AIRWAY OBSTRUCTION DEATHS AND INJURIES OCCUR**

- The majority of childhood suffocations, strangulations and chokings occur in the home.

#### **Suffocation**

- Sixty percent of infant suffocation occurs in the sleeping environment. Infants can suffocate when their faces become wedged against or buried in a mattress, pillow, infant cushion or other soft bedding or when someone in the same bed rolls over onto them. Infants can also suffocate when their mouths and noses are covered by or pressed against a plastic bag.
- It is estimated that as many as 900 infants whose deaths are attributed to Sudden Infant Death Syndrome (SIDS) each year are found in potentially suffocating environments, frequently on their stomachs, with their noses and mouths covered by soft bedding. Soft bedding may also be a factor in the deaths of children in playpens. Since 1988, at least 100 babies have died of suffocation or SIDS while in playpens with soft bedding or improper or extra mattresses.
- Children can suffocate when they become trapped in household appliances, such as refrigerators or dryers, and toy chests.
- Each year, cribs and play yards are involved in nearly 53 percent of all nursery product-related deaths among children ages 5 and under. Cribs (primarily older, used cribs) are responsible for about 26 strangulation and suffocation deaths each year.

#### **Choking**

- The majority of childhood choking injuries are associated with food items. Children are at risk from choking on small, round foods such as hot dogs, candies, nuts, grapes, carrots and popcorn.
- Non-food choking hazards tend to be round or conforming objects such as coins, small balls and balloons. More than 110 children, most of them ages 5 and under, have died from balloon-related suffocation since 1973.

#### **Strangulation**

- Strangulation occurs among children when consumer products become wrapped around their necks. Common items include clothing drawstrings, ribbons or other decorations, necklaces, pacifier strings, and window blind and drapery cords.
- Since 1991, at least 130 children have strangled on window covering cords. The majority of deaths involved outer blind cords and occurred when the cord was hanging near the floor or crib, or when furniture was placed near the cord. Other deaths occurred when children, ages 9 months to 17 months, strangled in loops formed by inner blind cords.

- Since 1985, at least 22 children have died from entanglement of clothing drawstrings, most often hood or neck drawstrings. In addition, more than half of drawstring entanglement incidents involved playground slides.
- Children strangle in openings that permit the passage of their bodies, yet are too small for, and entrap, their heads. These include spaces in bunk beds, cribs, playground equipment, baby strollers, carriages and high chairs. Since 1990, at least 57 children, nearly all ages 3 and under, have died due to entrapment in bunk beds alone.

### **WHO IS AT RISK**

- Children ages 4 and under, especially under age 1, are at greatest risk for all forms of airway obstruction injury.
- Male, low-income and nonwhite children are at increased risk from suffocation, choking and strangulation.
- Black infants are more likely than white infants to be placed to sleep on their stomachs and on softer bedding.
- Children placed in adult beds are at increased risk for airway obstruction injury. Since 1990, at least 296 children ages 2 and under have died in adult beds as a result of entrapment in the bed structure. Additionally, 209 children in this age group died in adult beds from smothering as a result of being covered by another person's body.

### **AIRWAY OBSTRUCTION PREVENTION LAWS AND REGULATIONS**

- The Child Safety Protection Act bans any toy intended for use by children under age 3 that may pose a choking, aspiration or ingestion hazard and requires choking hazard warning labels on packaging for these items when intended for use by children ages 3 to 6.
- The U.S. Consumer Product Safety Commission has issued voluntary guidelines for drawstrings on children's clothing to prevent children from strangling in the neck and waist drawstrings of upper outerwear garments, such as jackets and sweatshirts.
- In 1999, the CPSC voted to issue a mandatory standard for bunk beds to address entrapment hazards. The standard restricts opening sizes, requires guardrails and specifies company identification and age-specific warning labels to be present on all new bunk beds.

### **HEALTH CARE COSTS AND SAVINGS**

- The total annual cost of airway obstruction injury among children ages 14 and under is nearly \$3.7 billion. Children ages 4 and under account for more than 78 percent of these costs.

### **PREVENTION TIPS**

- Place an infant on her back on a firm, flat crib mattress in a crib that meets national safety standards. Remove pillows, comforters, toys and other soft products from the crib. Never hang anything on or above a crib with string or ribbon longer than 7 inches.
- Always supervise young children while they are eating and playing. Do not allow children under age 6 to eat small, round or hard foods, including hot dogs. Keep small items such as safety pins, jewelry and buttons out of children's reach. Learn first aid and CPR.
- Ensure that children play with age-appropriate toys, as indicated by safety labels. Inspect old and new toys regularly for damage. Consider purchasing a small parts tester to determine whether or not small toys and objects in your home may present a choking hazard to young children.
- Remove hood and neck drawstrings from all children's outerwear. To prevent strangulation, never allow children to wear necklaces, purses, scarves or clothing with drawstrings while on playgrounds.
- Tie up all window blind and drapery cords, or cut the ends and retrofit with safety tassels. The inner cords of blinds should be fitted with cord stops. Never place a crib near a window.
- Do not allow a child under age 6 to sleep on the top bunk of a bunk bed. Ensure that all spaces between the guardrail and bed frame, and all spaces in the head and foot boards, are less than 3.5 inches.

